

AI-TECH-16B

PATENT APPLICATION
Serial No. 10/774,882**REMARKS**

Claims 1-23 are pending in the captioned Application in which claims 1-3, 7, 8 and 21 are finally rejected, claims 4-6, 9-16 and 22-23 are allowed, and withdrawn claims 17-20 are to be rejoined.

Entry of this Amendment is proper because it amends rejected and withdrawn claims to place the Application in condition for allowance.

Claims 1 and 17 are amended as agreed with the Examiner in the telephone interview.

This Amendment is made in the interest of expediting prosecution, and nothing in this Amendment should be construed as Applicant's acquiescence in or agreement with the rejections or the reasons therefor.

Rejoinder of Claims 17-20:

Rejoinder of withdrawn claims 17-20 is solicited in view of the amendment of claim 17 to include limitations similar to those found in certain other allowed or allowable claims. This amendment conforms to the Examiner's request and agreement made in the telephone interview. Claims 18-20 are amended only for consistency with amended claim 17.

Claims 17-20 are allowable because claim 17 recites:

"providing on a first surface of the sheet of metal foil a first layer of a molecularly flexible dielectric adhesive having a modulus of elasticity less than about 500,000 psi, having a glass transition temperature less than about 0°C, and having the ability to withstand soldering at a temperature of about 220°C, the first layer of molecularly flexible dielectric adhesive having a plurality of via openings therein;

"building up electrically conductive material on the first surface of the metal foil to fill the plurality of via openings in the first layer of molecularly flexible dielectric adhesive, thereby forming a plurality of electrically conductive vias therein;

"wherein the plurality of electrically conductive vias are in a pattern for providing electrical connection between the metal foil and corresponding contact sites on a second surface of the first layer of molecularly flexible dielectric adhesive opposite the first surface thereof;

"patterning the metal foil to form a pattern of contacts and conductors electrically connected to the electrically conductive vias in the first molecularly flexible dielectric adhesive layer; and

"plating at least one of the electrically conductive vias and the contacts of the patterned metal foil to provide external contacts,"

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which is not described or suggested by any reference of record.

Claims 18-20 are amended only for consistency with amended claim 17, and are patentable at least because they depend from patentable claim 17.

Rejoinder and allowance of claims 17-20 is solicited.

Rejections Under 35 U.S.C. §103(a):

Claims 1-3 and 7-8 are rejected under 35 U.S.C. §103(a) as being unpatentable over US 6,265,782 to Yamamoto et al in view of US 5,847,929 to Bernier et al, and further in view of US 5,337,179 to Hodges.

The rejection is overcome by the amendment of claim 1.

Claim 1 is patentable because it recites:

“a first layer of molecularly flexible dielectric adhesive having a modulus of elasticity less than about 500,000 psi, having a glass transition temperature less than about 0°C, and having the ability to withstand soldering at a temperature of about 220°C;

“a metal foil on a first surface of said first layer of molecularly flexible dielectric adhesive, wherein said metal foil is patterned to define a pattern of electrical conductors having a plurality of contact sites for receiving a plurality of contacts of an electronic device; and

“a plurality of electrically conductive vias through said first layer of molecularly flexible dielectric adhesive, said plurality of electrically conductive vias being in a pattern for providing electrical connection between ones of said pattern of electrical conductors on the first surface of said first layer of molecularly flexible dielectric adhesive and corresponding contact sites on a second surface of said first layer of molecularly flexible dielectric adhesive opposite the first surface thereof,”

which is not described or suggested by Yamamoto et al, by Bernier et al, and/or by Hodges, whether taken individually or in any proper combination.

Applicant's claims 2-3 and 7-8 are patentable at least because they depend from patentable claim 1, and for the reasons previously set forth.

Claim 21 is rejected under 35 U.S.C. §103(a) as being unpatentable over Yamamoto et al in view of Bernier and Hodges, and further in view of US 5,984,691 to Brodsky et al.

The rejection is moot in view of the allowability of amended claim 1.

Applicant's claim 21 is patentable at least because it depends from patentable claim 1, and for the reasons previously set forth.

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Accordingly, the rejections under 35 U.S.C. §103(a) are overcome and should be withdrawn.

Comments on Reasons for Allowance:

Regarding allowed claims 4-6, 9-16 and 22-23, the Examiner's reasons for allowance set forth in paragraph 4 of the Office Action repeat assertions of what the references disclose that Applicant disputes. Applicants submit that each of allowed claims 4-6, 9-16 and 22-23 is allowable in its own right because of the particular combination of elements that it recites.

The Examiner makes a single statement of reasons for allowance of claims 4-6, 9-16, 22 and 23 that names elements from various ones of the claims as if the elements are included in each of the claims, which they are not.

For example, a "a protective enclosure ..." element is found in independent claim 4 and not in any other independent claim, an "underfill adhesive..." element is found in independent claim 5 and not in any other independent claim, and a "plurality of electrically conductive vias" element is found in independent claim 9 and not in any other independent claim.

Accordingly, each independent claim is allowable in its own right because of the particular elements that are recited therein, and not because of any other or different element recited in any other claim. Applicant's dependent claims are allowable at least because they depend from an allowable independent claim.

Conclusion:

Applicant respectfully requests that this Amendment which places the Application in condition for allowance be entered, that claims 17-20 be rejoined, that the rejections of claims 1-3, 7-8 and 21 be withdrawn, and that the Application including claims 1-23 be allowed.

The number of claims remaining does not exceed the number previously paid for, and so no fee is due therefor in this timely filed response.

Should the fee calculation be incorrect, or should any additional or other fee be due in consequence of this timely filed Response, please charge such fee and deposit any refund to Deposit Account 04-1406.

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The Examiner is requested to telephone the undersigned attorney if there is any question or if prosecution of this Application could be furthered by telephone.

Respectfully submitted,
Dann, Dorfman, Herrell & Skillman, P.C.
Attorneys for Applicant



Clement A. Berard
PTO Registration No. 29,613

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Dann, Dorfman, Herrell and Skillman, P.C.
1601 Market Street, Suite 2400
Philadelphia, PA 19103

Telephone: 215-563-4100
Facsimile: 215-563-4044

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